

Boeing NCO Experiment Spotlights Technologies in Urban Scenario

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A joint urban warfare scenario demonstrating command and control on the move provided the blueprint for this year's Boeing (NYSE: BA) joint network-centric operations experiment.

The one-hour demonstration, conducted by Boeing Phantom Works and Boeing Integrated Defense Systems, linked nine Boeing sites and featured a mix of live and simulated platforms and systems from 17 programs.

As with previous Boeing NCO technology experiments, this year's event showed how recently-developed technologies can link fielded and future systems in a network to enhance U.S. military capabilities.

The purpose of the experiment was to show how "connecting everyone on the battlefield in a networked operational environment results in people making better decisions faster," said Gary Fitzmire, Boeing Phantom Works vice president of Engineering and Information Technology. "We're looking to show three things - a common picture of the battlefield, speed of command and the use of assets to the best of our ability."

During the scenario, U.S. and coalition forces used network-enabled technologies to eliminate a surface-to-air missile site and a hostile convoy, conduct a multi-lingual interrogation and translation at a security check point, conduct surveillance of an escaping high-value target and eventually take out the high-value moving target.

"The experiment builds on the experience gained from previous demonstrations, and when combined with the latest in network-enabling technology, provides our customer with a unique insight into the future capabilities of systems like J-UCAS and TSAT," said George Muellner, Boeing Integrated Defense Systems vice president and general manager Air Force Systems. "We're giving the warfighter a window on the battlefield of tomorrow."

The experiment also demonstrated the following capabilities:

- An advanced IP-based joint network utilizing live Joint Tactical Radio System hardware
- Dismounted soldier tracking and situational assessment to reduce fratricide
- An advanced tactical communications infrastructure
- Closed-loop remote sensor tracking and target handoff to weapons
- Unmanned aerial vehicles performing multiple missions and roles
- Use of a mediator audio and text language translation technology with distributed multi-level security
- Live, virtual and constructive simulations to rapidly advance and deploy various capabilities.

Live assets used in the demonstration included an Unmanned Little Bird rotorcraft to track moving vehicles, High-Mobility Multipurpose Wheeled Vehicles (HMMWVs) equipped with Directional Network Waveform, and Connexion by Boeing data links to track blue (or friendly) forces. The simulated assets included an F-15E loaded with Small Diameter Bombs, an AH-64 Apache Longbow helicopter, a CH-47 Chinook helicopter, an X-45 Joint-Unmanned Combat Air System (J-UCAS), and the Transformational Satellite Communications System (TSAT) that provided a high bandwidth global picture of events to the main command center.

Boeing engineers, as well as invited representatives from the U.S. Army, U.S. Air Force and U.S. Marine Corps viewed the experiment from Boeing modeling and simulation centers at St. Louis and St. Charles, Mo.; Philadelphia; Washington, D.C. (the Boeing Integration Center-East); Hampton, Va.; Mesa, Ariz.; and Palmdale, El Segundo and Anaheim, Calif. (the Boeing Integration Center-West).

This year's experiment was the third in a series of events Boeing has conducted to showcase an architecture integrating "best-of-industry" solutions to enhance the joint network-centric capabilities of fielded systems. The first demonstration took place in November 2003, when Boeing linked an airborne F/A-18F, three simulation labs and multiple virtual war-fighting platforms in what was essentially a U.S. Navy scenario. The second experiment in December 2004, linked four live airborne platforms and more than 30 virtual war-fighting platforms in a U.S. Air Force command and control scenario.

A unit of The Boeing Company, Boeing Integrated Defense Systems is one of the world's largest space and defense businesses. Headquartered in St. Louis, Boeing Integrated Defense Systems is a \$30.5 billion business. It provides network-centric system solutions to its global military, government, and commercial customers. It is a leading provider of intelligence, surveillance and reconnaissance systems; the world's largest military aircraft manufacturer; the world's largest satellite manufacturer and a leading provider of space-based communications; the primary systems integrator for U.S. missile defense; NASA's largest contractor; and a global leader in sustainment solutions and launch services.

Boeing Phantom Works is the advanced research and development unit and a catalyst for innovation for The Boeing Company. It provides advanced solutions and innovative, breakthrough technologies that reduce cycle time and cost while improving the quality and performance of aerospace products and services.

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